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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SCREENING METHOD

(57) Abstract: The invention relates to a screening method to determine the susceptibility of a mammal, preferably a human, to abnormal development of the nervous system and including therapeutic methods and compositions for the treatment of neurodegenerative conditions which result in abnormal expression of a family of polypeptides which induce the apoptotic function of p53.

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INTERNATIONAL SEARCH REPORT

Inte...ication No
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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N33/68 A61K38/17 A61K39/395

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

SEQUENCE SEARCH, WPI Data, EPO-Internal, PAJ, BIOSIS, MEDLINE, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TAN ZHIQUN ET AL: "Immunohistochemical study of p53-associated proteins in rat brain following lithium-pilocarpine status epilepticus" BRAIN RESEARCH, vol. 929, no. 1, 1 March 2002 (2002-03-01), pages 129-138, XP002273935 ISSN: 0006-8993 abstract figures 2,6	1
Y	WO 02 12325 A (LUDWIG INST CANCER RES ;LU XIN (GB)) 14 February 2002 (2002-02-14) cited in the application claims 1-5,30,31,38-43,45-52 page 48, line 23 - line 25 --- -/--	1-45

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

26 March 2004

Date of mailing of the international search report

08/04/2004

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INTERNATIONAL SEARCH REPORT

Inventor Application No
PCT/GB 03/04258

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>WO 99 15657 A (NANDABALAN KRISHNAN ;CURAGEN CORP (US); YANG MEIJA (US); SCHULZ VI) 1 April 1999 (1999-04-01) figure 1 page 32, line 5 -page 33, line 16 page 40, line 6 - line 20 page 45, line 13 - line 27 ---</p>	1-45
Y	<p>SAMUELS-LEV YARDENA ET AL: "ASPP proteins specifically stimulate the apoptotic function of p53" MOLECULAR CELL, CELL PRESS, CAMBRIDGE, MA, US, vol. 8, no. 4, October 2001 (2001-10), pages 781-794, XP002202189 ISSN: 1097-2765 the whole document ---</p>	1-45
P,X	<p>WO 03 031571 A (ALSOBROOK JOHN P II ;BURGESS CATHERINE E (US); EDINGER SHLOMIT R () 17 April 2003 (2003-04-17) claims 1,2,8,9,11-19 page 8; table A page 9, line 7 - line 24 example 20 page 169, line 28 -page 171, line 19 page 211, line 10 - line 14 page 216, line 2 -page 217, line 13 -----</p>	1-45

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/04258

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1, 6-15 and 43 relate to polypeptides defined by reference to a desirable characteristic or property, namely to polypeptides having an inducing effect on the apoptotic function of p53.

The claims cover all polypeptides having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT for only a very limited number of such polypeptides. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the polypeptides by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the polypeptides as defined by figure 3 and 4, i.e. SEQ.ID. No. 10 and SEQ. ID. No. 11.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Int. Patent No.
PCT/GB 03/04258

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0212325	A	14-02-2002	AU 7651501 A	18-02-2002
			CA 2417368 A1	14-02-2002
			CN 1446228 T	01-10-2003
			EP 1313762 A2	28-05-2003
			WO 0212325 A2	14-02-2002
WO 9915657	A	01-04-1999	US 5977311 A	02-11-1999
			AU 9321898 A	12-04-1999
			CA 2303405 A1	01-04-1999
			EP 1017808 A2	12-07-2000
			JP 2001517439 T	09-10-2001
			WO 9915657 A2	01-04-1999
			US 6627405 B1	30-09-2003
WO 03031571	A	17-04-2003	US 2004014058 A1	22-01-2004
			WO 03031571 A2	17-04-2003
			WO 03029423 A2	10-04-2003
			WO 03029424 A2	10-04-2003
			US 2004038223 A1	26-02-2004
			US 2004038877 A1	26-02-2004
			WO 03031572 A2	17-04-2003
			US 2003199442 A1	23-10-2003